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EXAMINER	
NGUYEN, JOSEPH D	
ART UNIT	**PAPER NUMBER**
2683	8

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/922,997	AMERGA ET AL.	
	Examiner	Art Unit	
	Joseph D Nguyen	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeBlanc et al. (6,236,365).

Regarding claim 1, LeBlanc et al. discloses a method for determining a position of a remote terminal (mobile station (MS)) in a wireless communication network having included therein a plurality of transmitting sources (abstract, fig. 2), the method comprising:

a) obtaining a set of time measurements for a set of transmitting sources (abstract, fig. 1-2, col. 17 line 14 thru col. 19 line 60, and col. 39 lines 7-67), wherein each time measurement is derived based on a transmission received at the remote terminal from a respective transmitting source that is either an origination source or a repeater associated with the origination source (abstract, fig. 1-2, col. 17 line 14 thru col. 19 line 60, and col. 39 lines 7-67);

b) identifying a particular origination source for each received time measurement (col. 18 lines 25-60, col. 39 lines 45-67, and col. 53 lines 1-17);

c) comparing a list of originating sources for the received time measurements against a list of probable origination sources for each of at least one repeater in the network (fig. 8, col. 12 lines 7-67, col. 21 lines 19-36, col. 34 lines 5-18, col. 34 lines 54-63, and col. 35 lines 9-23); and

d) determining whether the remote terminal is under a coverage of a particular repeater based on a result of the comparing (fig. 8, col. 33 line 62 thru col. 34 line 18).

However, LeBlanc et al. does not specifically disclose comparing a list of originating sources for the received time measurements against a list of probable origination sources for each of at least one repeater in the network and determining whether the remote terminal is under a coverage of a particular repeater. But it would have been obvious to one ordinary skilled in the art that the LeBlanc et al. system compared all the receiving time measurements against a list of probable origination sources and to determine the exact location of the remote terminal which means it also knows whether the remote terminal is under a coverage of a particular repeater in the network too.

Regarding claim 2, LeBlanc et al. further discloses a method of claim 1, further comprising: prior to the comparing, estimating whether the remote terminal is under the coverage of a repeater in the network (col. 18 lines 1-24).

Regarding claim 3, LeBlanc et al. further discloses the method of claim 1, further comprising: forming a list of probable origination sources for each repeater within the network (col. 54 line 42 thru col. 55 line 27). However, LeBlanc et al. does not specifically disclose forming a list of probable origination sources for each repeater in

the network. But it would have been obvious to one ordinary skilled in the art that the list of probable origination sources of LeBlanc et al. also included at least each repeater in the network in order to determine the exact location of the remote terminal.

Regarding claim 4, LeBlanc et al. further discloses the method of claim 3, wherein the list of probable origination sources for each repeater is formed via empirical measurements at various locations within a coverage area of the repeater (col. 25 lines 50-67, col. 31 lines 10-35).

Regarding claim 5, LeBlanc et al. further discloses the method of claim 3, wherein the list of probable origination sources for each repeater is formed via measurements received from remote terminals operating within a coverage area of the repeater (col. 10 line 60 thru col. 11 lines 9, and col. 36 lines 24-43).

Regarding claim 6, LeBlanc et al. further discloses the method of claim 1, wherein the origination sources are base stations of a CDMA communication network (abstract).

Regarding claim 7, LeBlanc et al. discloses a method for determining a position of a remote terminal in a wireless communication network having included therein a plurality of transmitting sources, wherein each transmitting source is either an origination source for a transmission or a repeater associated with the origination source (abstract, fig. 2), the method comprising:

a) cataloging (collecting) an environment type for each repeater within the network (col. 12 lines 7-38, col. 17 line 14 thru col. 18 line 60, col. 34 lines 4-18, and col. 34 lines 54-63);

b) obtaining a set of time measurements for a set of transmitting sources (abstract, fig. 1-2, col. 17 line 14 thru col. 19 line 60, and col. 39 lines 7-67), wherein each time measurement is derived based on a transmission received at the remote terminal from either an origination source or its associated repeater (abstract, fig. 1-2, col. 17 line 14 thru col. 19 line 60, and col. 39 lines 7-67); and

c) determining whether the remote terminal is under a coverage of a particular repeater based on the cataloged environment type for each repeater (fig. 6, col. 33 line 62 thru col. 34 line 18) and the received time measurements (col. 21 line 19 thru col. 22 line 10). However, LeBlanc et al. does not specifically disclose cataloging an environment type for each repeater and determining whether the remote terminal is under a coverage of a particular repeater. But it would have been obvious to one ordinary skilled in the art that the LeBlanc et al. system collecting all the particular coverage are of the remote terminal in order to determine the exact location of the remote terminal and to determine the remote terminal is in particular coverage area which means it can determine the remote terminal is under a coverage of a particular repeater.

Regarding claim 8, LeBlanc et al. further discloses the method of claim 7, further comprising: for each origination source within the network, identifying whether or not the origination source is associated with at least one repeater (col. 38 lines 1-54, col. 39 lines 45-67, and col. 53 lines 1-17). However, LeBlanc et al. does not specifically disclose identifying whether or not the resource is associated with at least one repeater. But it would have been obvious to one ordinary skilled in the art that the LeBlanc et al.

system of identifying all the coverage area which means it can identify whether or not the origination source is associated with at least one repeater in order to determine exact location of remote terminal.

Regarding claim 9, LeBlanc et al. further discloses the method of claim 7, wherein the environment type for each repeater is cataloged based on a list of origination sources that may be received while under the coverage of the repeater (col. 34 lines 4-18, col. 34 lines 54-67).

Regarding claim 10, LeBlanc et al. further discloses the method of claim 7, wherein the remote terminal is determined to be under the coverage of the particular repeater if the received time measurements are derived from a limited number of origination sources (col. 17 line 14 thru col. 18 line 60, and col. 34 lines 4-19).

Regarding claim 11, LeBlanc et al. further discloses the method of claim 7, wherein the remote terminal is determined to be under the coverage of the particular repeater if the received time measurements are derived from one or two origination sources (col. 34 lines 4-19).

Regarding claim 12, LeBlanc et al. discloses a method for determining a position of a remote terminal in a wireless communication network having included therein a plurality of transmitting sources (abstract, fig. 2), the method comprising:

a) obtaining at least one time measurement for at least one transmitting source, wherein each received time measurement is derived based on a transmission received at the remote terminal from a transmitting source that is either an origination source or a

repeater associated with the origination source (abstract, fig. 1-2, col. 17 lines 14-43, and col. 39 lines 7-67);

b) determining a propagation delays associated with each received time measurement (fig. 6, col. 34 lines 4-18);

c) comparing the propagation delays for each received time measurement against a threshold value for the origination source associated with the time measurement (col. 21 lines 19-36, and col. 54 lines 1-11); and

d) determining whether the remote terminal is under a coverage of a particular repeater based on a result of the comparing (col. 18 lines 1-60, and col. 21 line 19 thru col. 22 line 10, and col. 34 line 4-66). However, LeBlanc et al. does not specifically disclose determining whether the remote terminal is under a coverage of a particular repeater base on a result of the comparing. But it would have been obvious to one ordinary skilled in the art that the of LeBlanc et al. system can determining the remote terminal at a particular coverage area which means it can determining whether the remote terminal is under a particular repeater.

Regarding claim 13, LeBlanc et al. further discloses the method of claim 12, wherein the threshold value for a particular origination source is derived based in part on an expected worst case propagation delays for a transmission from the origination source to a particular remote terminal located within the coverage of the origination source (fig. 6-7, col. 12 lines 7-38, col. 21 lines 19-36, col. 36 lines 24-43, and col. 41 lines 1-48).

Regarding claim 14, LeBlanc et al. further discloses the method of claim 12, wherein the threshold value for a particular origination source is derived based in part on an expected best case propagation delays for a transmission from the origination source via a repeater to a particular remote terminal located within the coverage of the repeater (fig. 8-12, col. 41 lines 1-48).

Regarding claim 15, LeBlanc et al. further discloses the method of claim 12, wherein the threshold value for a particular origination source is selected to reduce a likelihood of erroneously identifying the remote terminal as being under the coverage of a repeater associated with the origination source (col. 50 lines 7-30).

Regarding claim 16, Leblanc et al. discloses a method for determining a position of a remote terminal in a wireless communication network having included therein a plurality of transmitting sources (abstract, fig. 2), the method comprising:

a) obtaining a set of time measurements for a set of transmitting sources (abstract, fig. 1-2, col. 17 lines 14-43, and col. 39 lines 7-67), wherein each time measurement is derived based on a transmission received at the remote terminal from a transmitting source that is either an origination source or a repeater associated with the origination source (abstract, fig. 1-2, col. 17 lines 14-43, and col. 39 lines 7-67);

b) identifying a particular origination source for each received time measurement (col. 18 lines 25-60, col. 39 lines 45-67, and col. 53 lines 1-17).

c) determining whether the identified origination source for each received time measurement is associated with a repeater (fig. 8, col. 33 line 62 thru col. 34 line 18);

d) discarding time measurements for selected ones of origination sources determined to be associated with repeaters (fig. 6-8, col. 38 lines 55-65); and

e) determining an initial position estimate for the remote terminal based on remaining time measurements not discarded (col. 69 lines 17-21).

However, LeBlanc et al. does not specifically disclose determining whether the remote terminal is under a coverage of a particular repeater and determining an initial position estimate. But it would have been obvious to one ordinary skilled in the art that the system of LeBlanc et al. can determining the remote terminal at a particular coverage area which means it can determining whether the remote terminal is under a particular repeater.

Regarding claim 17, LeBlanc et al. further discloses the method of claim 16, further comprising: retaining time measurement for a reference origination source even if the reference origination source is associated with a repeater (fig. 6-8, col. 25 lines 50-67).

Regarding claim 18, LeBlanc et al. further discloses the method of claim 16, further comprising: determining whether an origination source not associated with a repeater is available for selection as a reference origination source for the remote terminal (col. 50 lines 9-20).

Regarding claim 19, LeBlanc et al. further discloses the method of claim 18, further comprising: discarding time measurements for origination sources associated with repeaters if at least one origination source not associated with a repeater is

available for selection as the reference origination source for the remote terminal (col. 38 lines 55-65, and col. 54 lines 42-47).

Regarding claim 20, LeBlanc et al. further discloses the method of claim 18, further comprising: retaining time measurements for origination sources associated with repeaters if no origination source not associated with a repeater is available for selection as the reference origination source for the remote terminal (col. 25 lines 50-67, and col. 31 lines 10-57).

Regarding claim 21, LeBlanc et al. further discloses the method of claim 16, further comprising: generating one or more database to store the initial position estimate for the remote terminal, wherein each search window is used to search for a respective GPS satellite (fig. 4, 8, col. 25 lines 41-49, col. 26 lines 27-60, and col. 56 lines 53-67, and col. 58 lines 26-38).

3. Claims 22-25, 29-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeBlanc et al. (6,236,365) in view of Fernandez-Corbaton et al. (WO 01/48506).

Regarding claim 22, LeBlanc et al. discloses a method for determining a position of a remote terminal in a wireless communication network having included therein a plurality of transmitting sources (abstract, fig. 1), the method comprising:

a) obtaining a set of time measurements for a set of transmitting sources (abstract, fig. 2, col. 17 lines 14-43, and col. 39 lines 7-67), wherein each time measurement is derived based on a transmission received at the remote terminal from a

transmitting source that is either an origination source or a repeater associated with the origination source (abstract, fig. 1-2, page 8 line 1 thru page 11 line 31);

b) identifying a particular origination source for each received time measurement (col. 18 lines 25-60, col. 39 lines 45-67, and col. 53 lines 1-17);

c) determining an initial position estimate for the remote terminal based on the received time measurements (col. 17 lines 14-43, and col. 58 lines 26-38);

d) determining whether the origination source for at least one time measurement used to determine the initial position estimate for the remote terminal is associated with a repeater (fig. 6, col. 34 lines 4-66).

e) generating one or more search windows (col. 21 lines 19-36, col. 25 lines 41-67, and col. 26 lines 27-32), for the remote terminal based on the initial position estimate for the remote terminal, wherein each search window is used to search for a respective GPS satellite (col. 25 lines 41-49, col. 26 lines 27-60, and col. 56 lines 53-67, and col. 58 lines 26-38).

However, LeBlanc et al. does not specifically disclose determining an initial position estimate.

Fernandez-Corbaton et al. teaches determining an initial position estimate (page 9 lines 19-34). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the LeBlanc et al. system with the teaching of Fernandez-Corbaton et al of determining an intitial position estimate in order to determine the exact position of the remote terminal in an emergency situation.

Regarding claim 23, LeBlanc et al. further discloses the method of claim 22, further comprising: compensating one or more search window if any time measurement used to determine the initial position estimate for the remote terminal is derived from an origination source associated with a repeater (col. 25 lines 41-67, col. 31 line 50 thru col. 32 line 4, and col. 34 lines 54-66).

Regarding claim 24, LeBlanc et al. further discloses the method of claim 23, wherein the compensating includes widening at least one search window to account for ambiguity due to the repeater (col. 21 lines 19-56 and col. 34 lines 4-66).

Regarding claim 25, LeBlanc et al. further discloses the method of claim 23, wherein the compensating includes adjusting a time offset for at least one search window (col. 35 lines 9-15, and col. 54 lines 1-10).

Regarding claim 29, LeBlanc et al. discloses a method for determining a position of a remote terminal in a wireless communication network having included therein a plurality of transmitting sources (abstract, fig. 12), the method comprising:

a) obtaining a set of time measurements for a set of transmitting sources (abstract, fig. 1-2, col. 17 lines 14-43, and col. 39 lines 7-67), wherein each time measurement is derived based on a transmission received at the remote terminal from a transmitting source that is either an origination source or a repeater associated with the origination source (abstract, fig. 1-2, col. 17 lines 14-43, and col. 39 lines 7-67), and wherein a plurality of time measurements are received for a plurality of transmissions from a particular origination source or its associated repeater (abstract, fig. 1-2, col. 17 lines 14-43, and col. 39 lines 7-67);

b) computing a plurality of position estimates based on the received time measurements (col. 35 lines 15-62). However, LeBlanc et al. does not specifically disclose selecting one of the computed position estimates as an initial position estimate for the remote terminal.

Fernandez-Corbaton et al. teaches selecting one of the computed position estimates as an initial position estimate for the remote terminal (page 12 lines 21-30). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the system of Leblanc et al. with the teaching of Fernandez-Corbaton et al. of selecting one of the initial position estimate for the remote terminal in order to determine the exact position of the remote terminal in an emergency situation.

Regarding claim 30, Fernandez-Corbaton et al. further teaches the method of claim 29, further comprising: deriving a metric for each computed position estimate, and wherein the computed position estimate having a best metric is selected as the initial position estimate for the remote terminal (page 13 thru page 25). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the LeBlanc et al. system with the teaching of Fernandez-Corbaton et al. in order to determine the best initial position estimate of the remote terminal.

Regarding claim 31, LeBlanc et al. discloses a method for determining a position of a remote terminal in a wireless communication network having included therein a plurality of transmitting sources (abstract, fig. 2), the method comprising:

a) obtaining a set of time measurements for a set of transmitting sources (abstract, fig. 1-2, col. 17 lines 14-43, and col. 39 lines 7-67), wherein each time measurement is derived based on a transmission received at the remote terminal from a transmitting source that is either an origination source or a repeater associated with the origination source (abstract, fig. 1-2, col. 17 lines 14-43, and col. 39 lines 7-67);

b) computing a plurality of position estimates based on the received time measurements and a plurality of network hypotheses (col. 35 line 15 thru col. 37 line 20), wherein each network hypothesis corresponds to a respective combination of origination sources and repeaters hypothesized to be the transmitting sources for the plurality of time measurements used to compute the position estimate for remote terminal (col. 34 lines 4-66). However, LeBlanc et al. does not specifically disclose selecting one of the computed position estimates as an initial position estimate for the remote terminal.

Fernandez-Corbaton et al. teaches selecting one of the computed position estimates as an initial position estimate for the remote terminal (page 12 lines 21-30). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the system of Leblanc et al. with the teaching of Fernandez-Corbaton et al. of selecting one of the initial position estimate for the remote terminal in order to determine the exact position of the remote terminal in an emergency situation.

Regarding claim 32, LeBlanc et al. further discloses the method of claim 31, further comprising: for each network hypothesis, if a particular time measurement is

hypothesized to be from a repeater and not an origination source (col. 34 line 54 thru col. 35 line 45), compensating (offsetting) for delays associated with the repeater (fig. 6, col. 21 lines 19-36, and col. 36 lines 14-23).

Regarding claim 33, LeBlanc et al. further discloses the method of claim 32, wherein the compensating for delays associated with a particular repeater includes subtracting out a propagation delays between the repeater and the associated origination source, and subtracting out a second delays introduced by the repeater (col. 19 lines 62-67, and col. 21 lines 19-36). However, LeBlanc et al. does not specifically disclose subtracting out a propagation delays between the repeater and the associated origination source, and subtracting out a second delays introduced by the repeater. But it would have been obvious to one ordinary skilled in the art that when using Wireless technology CDMA, when each time delay is offset (subtracting) which means wherein the compensating for delays include subtracting out a propagation delays between the repeater and the associated origination source, and subtracting out a second delays introduced by the repeater in order to determine the exact location of the remote terminal in emergency situation.

Regarding claim 34, Fernandez-Corbaton et al. further teaches the method of claim 31, further comprising: deriving a metric for each computed position estimate, and wherein the computed position estimate having a best metric is selected as the initial position estimate for the remote terminal (page 13 thru page 25). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made

to modify the LeBlanc et al. system with the teaching of Fernandez-Corbaton et al. in order to determine the best initial position estimate of the remote terminal.

Regarding claim 35, LeBlanc et al. further discloses the method of claim 34, wherein the metric for each computed position estimate is based on a signal strength associated with each received time measurement used to compute the position estimate (col. 20 lines 58 thru col. 22 line 11).

Regarding claim 36, LeBlanc et al. further discloses the method of claim 31, wherein each received time measurement is derived from a respective and different origination source (fig. 2, 6-10, and col. 17 lines 14-61).

Regarding claim 37, LeBlanc et al. further disclose the method of claim 31, further comprising: generating one or more search windows based on the initial position estimate for the remote terminal, wherein each search window is used to search for a respective GPS satellite (col. 21 lines 19-36, col. 25 lines 31-49, col. 56 lines 12-24, and col. 58 lines 26-38).

Regarding claim 38. LeBlanc et al. further discloses the method of claim 37, further comprising: deriving a final position estimate for the remote terminal based on one or more time measurements from one or more GPS satellites (col. 58 lines 26-38, and col. 65 lines 39-64).

Regarding claim 39. LeBlanc et al. discloses a remote terminal in a wireless communication network (abstract, #140 fig. 6), comprising:

a) a receiver unit (#520, fig. 16) configured to receive, process, and digitize a received signal to provide samples (fig. 16, col. 21 lines 19 thru col. 22 line 10);

b) a demodulator coupled to the receiver unit and configured to receive and process the samples to provide a set to time measurements for a set of transmitting sources (fig. 16, col. 21 line 55 thru col. 22 line 11), wherein each time measurement is derived based on a transmission received at the remote terminal from a respective transmitting source that is either an origination source or a repeater associated with the origination source (fig. 2, col. 21 line 19 thru col. 22 line 11, col. 23 lines 11-40, col. 39 lines 7-67, and col. 54 line 64 thru col. 55 line 4);

c) a controller (#534 fig. 16) operatively coupled to the demodulator and configured to receive the time measurements (col. 21 line 55 thru col. 22 line 11), and further configured to receive or derive one or more search windows based on an initial position estimate for the remote terminal (col. 21 lines 19-36, col. 25 lines 31-49), wherein each search window is used to search for a respective GPS satellite (col. 21 lines 19-36, col. 25 lines 31-49, col. 56 lines 12-24, and col. 58 lines 26-38); and

d) a GPS receiver (#336 fig. 7, and col. 56 lines 56-58) operatively coupled to the controller and configured to search for one or more GPS satellites in accordance with the one or more search windows (col. 21 lines 19-36, col. 25 lines 31-49, col. 56 lines 12-24, and col. 58 lines 26-38).

However, LeBlanc et al. does not specifically disclose search windows based on an initial position estimate for the remote terminal.

Fernandez-Corbaton et al. teaches search windows based on an initial position estimate for the remote terminal (abstract, page 12 lines 21-30). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made

to modify the LeBlanc et al. system with the teaching of Fernandez-Corbaton et al. of initial position estimate in order to determine the exact location of the remote terminal in emergency situation.

Regarding claim 40, LeBlanc et al. further discloses the remote terminal of claim 39, further comprising: a signal quality measurement unit operatively coupled to the demodulator and configured to derive an estimate of a signal strength for each transmission used to derive a time measurement (fig. 16, col. 21 line 19 thru col. 22 line 11).

Regarding claim 41, LeBlanc et al. further discloses the remote terminal of claim 39, further comprising:

a) a modulator (#542 fig. 16) operatively coupled to the controller and configured to receive and process the set of time measurements (col. 21 line 19 thru col. 22 line 11); and

b) a transmitter unit (#516, 546 fig. 16, col. 22 lines 42 thru col. 23 line 30) operatively coupled to the modulator and configured to transmit the set of time measurements.

Regarding claim 42, LeBlanc et al. discloses a processing unit in a wireless communication network (#17 fig. 29), comprising:

a) a transceiver configured to exchange data with a network entity (col. 12 lines 39-67);

b) a receive data processor (#20 fig. 43) coupled to the transceiver and configured to receive from a remote terminal a set of time measurements for a set of

transmitting sources (fig. 2, col. 21 line 19 thru col. 22 line 11, and col. 23 lines 11-67), wherein each time measurement is derived based on a transmission received at the remote terminal from a transmitting source that is either an origination source or a repeater associated with the origination source (fig. 6, col. 34 lines 4-66); and

c) a controller (#15 fig. 29) coupled to the receive data processor and configured to determine whether the remote terminal is under a coverage of a repeater within the network (fig. 6, col. 34 lines 4-66). However, LeBlanc et al. does not specifically disclose to derive an initial position estimate for the remote terminal based on the received time measurements.

Fernandez-Corbaton et al. teaches to determine whether the remote terminal is under a coverage of a repeater within the network to derive an initial position estimate for the remote terminal (abstract, page 12 lines 21-30). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the LeBlanc et al. system with the teaching of Fernandez-Corbaton et al. of initial position estimate in order to determine the exact location of the remote terminal in emergency situation.

Regarding claim 43, LeBlanc et al. further discloses the processing unit of claim 42, wherein the controller is further configured to generate one or more search windows for the remote terminal based on the initial position estimate for the remote terminal (col. 21 lines 19-36, col. 25 lines 31-49, col. 56 lines 12-24, and col. 58 lines 26-38), wherein each search window is used to search for a respective GPS satellite (col. 56 lines 12-24, and col. 58 lines 26-38), the processing unit further comprising: a transmit data

processor coupled to the controller and the transceiver and configured to receive and forward the one or more generated search windows to the transceiver for transmission to the remote terminal (fig. 29, col. 56 lines 12-24, and col. 58 lines 26-38). However, LeBlanc et al. does not specifically disclose search windows based on an initial position estimate for the remote terminal.

Fernandez-Corbaton et al. teaches search windows based on an initial position estimate for the remote terminal (abstract, page 12 lines 21-30). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the LeBlanc et al. system with the teaching of Fernandez-Corbaton et al. of initial position estimate in order to determine the exact location of the remote terminal in emergency situation.

Regarding claim 44, LeBlanc et al. further discloses the processing unit of claim 42, wherein the controller is further configured to compute a plurality of position estimates based on the received time measurements and a plurality of network hypotheses (abstract, fig. 2, col. 35 line 3 thru col. 36 line 43), wherein each network hypothesis corresponds to a respective combination of origination sources and repeaters hypothesized to be the transmitting sources for the plurality of time measurements used to compute the position estimate for remote terminal (fig. 2, col. 56 line 50 thru col. 57 lines 25), and select one of the plurality of computed position estimates as the initial position estimate for the remote terminal (col. 24 lines 1-11, and col. 35 line 3 thru col. 36 line 43).

Regarding claim 45, LeBlanc et al. further discloses the processing unit of claim 42, further comprising: a data storage unit configured to store a list of probable origination sources for each repeater within the network, and wherein the controller is further configured to determine whether the remote terminal is under the coverage of a particular repeater in the network by comparing a list of originating sources for the received time measurements against the list of probable origination sources for each repeater within the network.

4. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeBlanc et al. (6,236,365) in view of Fernandez-Corbaton et al. (WO 01/48506 A2) and further in view of Fuchs et al. (6,453,237).

Regarding claim 26, in the modify LeBlanc et al. system, LeBlanc et al. further discloses the method of claim 22, wherein the search window. However, LeBlanc et al. does not specifically disclose the search window for a particular GPS satellite is derived based on estimated closest and furthest distances between the remote terminal and the GPS.

Fuchs et al. teaches the search window for a particular GPS satellite is derived base on estimated closest and furthest distances between the remote terminal and the GPS satellite (col. 8 line 60 thru col. 10 line 33). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the modify LeBlanc et al. system with the teaching of Fuchs et al. of search window in order to determine accurately the position of the remote terminal.

Regarding claim 27, Fuchs et al. further discloses the method of claim 26, wherein the estimated closest and furthest distances between the remote terminal and the GPS satellite account for ambiguity due to at least one time measurement, used to determine the initial position estimate for the remote terminal, being derived from an origination source associated with a repeater (col. 11 lines 16-67). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the modify LeBlanc et al. system with the teaching of Fuchs et al. of estimating closest and furthest between the remote terminal and GPS in order to determine accurately the position of the remote terminal.

Regarding claim 28, in the modify LeBlanc et al. system, LeBlanc et al. further discloses the method of claim 22. However, LeBlanc et al. does not specifically disclose wherein a time offset associated with the search window for a particular GPS satellite is derived based on an estimated average distance between the remote terminal and the GPS satellite.

Fuchs et al. teaches wherein a time offset associated with the search window for a particular GPS satellite is derived based on an estimated average distance between the remote terminal and the GPS satellite (col. 20 lines 7-67). Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the modify LeBlanc et al. system with the teaching of Fuchs et al. of average distance in order to determine the exact position of the remote terminal.

5. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

703 308-9051, (for formal communication intended for entry)

Or:

(703) 305-9509 (for informal or draft communications, please label "PROPOSED" OR "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA. Sixth floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D Nguyen whose telephone number is (703) 605-1301. The examiner can normally be reached on 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Joseph Nguyen

Jun. 23, 2004

WILLIAM TROST
SUPERVISORY PATENT EXAMINER
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